PRYSMIAN
CABLES & SYSTEMS

TECWATER EMV-FC
S1BC4N8-F 0,6/1 kV

Screened Cable for Water Application

ENERGY

Technical Data

	Trademark	TECWATER EMV-FC
	Type designation	S1BC4N8-F
	Specification	Design and tests according to Prysmian specification
	Application	For making connections to electrical equipment used in a waste-water environment and subject to medium mechanical stress, e.g. submersible pumps in sewage disposal and treatment as well as submersible mixer. Especially for frequency converter controlled AC drives and if considerable demands in respect of electromagnetic compatibility (EMC) according to the EMC directive imposes. For an effective shielding both ends of cable must have a good shield contact to ground. Owing to the various (and frequently changing) substances of which the contaminated water is made up, the cables may be used only in easily accessible areas that can be inspected (installation depth of approximately 10 m, as customarily encountered in sewage water tanks). These cables are also suitable for use in process water, cooling water, mine surface water, rainwater and combined waste water. Under certain circumstances they can be suitable for groundwater and seawater; it is possible to impose less stringent specifications in terms of accessibility and inspection. In such cases the cables can be used at depths up to 500 m. If the water concerned is aggressive or composed of special substances, the cables resistance properties should be examined. These cables can be used indoors, outdoors, in explosion-hazard areas. In other respects, DIN VDE 0298-300 / HD 516 applies
Electrical parameters	Rated voltage	Uo/U = 0.6/1 kV
	Maximum permissible operation voltage of plant and power system	- Single-phase and three-phase AC operation Line-Earth/ Line-Line 0.7/1.2 kV - DC operation Line-Earth/ Line-Line 0.9/1.8 kV
	Maximum permissible peak AC voltage Û	2,4 kV
	AC test voltage	5 kV (test duration 5 min.)
	Current-carrying capacity	The values are valid for a cable in permanent operation with DC or AC with 50 up to 60 Hz in air at 30 °C. In other respects, DIN VDE 0298-4 applies
Thermal parameters	Maximum permissible operating temperature of the conductor	permanent 90°C
	Maximum permissible short-circuit temperature at conductor	250°C (max. 5 s)
	Maximum permissible water temperature	40°C (At higher water temperatures , a shortened cable service life is to be expected.)
	Minimum permissible temperatures during operation, laying, transportation and storage	when in motion - 25°C when stationary - 40°C

Technical Data

Mechanical parameters	Tensile strength	max. 15 N/mm², see selection table
	Minimum bending radii	See selection table
Stability against other influences	Water resistance	Test according to DIN VDE 0282-16 (HD 22.16)
	Resistance to oil	Test according to DIN EN 60811-2-1
	Behaviour in case of fire	Test according to DIN EN 60332-1-2

Design features

Conductor	Copper, plain, finely stranded Class 5 acording to DIN VDE 0295 / HD 383 / IEC 60228
Insulation	Ozone, water and weather resistant insulation compound, base EPR (Ethylene-Propylene Rubber)
Core identification	Colour of cores according to DIN VDE 0293-308:2003
Sheath	2 layer sheath system: Inner layer: EPR special compound; colour: blue Outer layer: CPE special compound; water and oil resistant; colour: black
Shield	Braiding of tinned copper wires between inner and outer sheath. Maximum transfer impedance of 30 Ohm/km at 30 MHz
Marking, example	~~"NNNNNNNN" ~~ TECWATER EMV-FC S1BC4N8-F 3x10/10KON 0,6/1 kV ~~ "NNNNNNNN" = Order number

Selection and ordering data

Number of cores and nominal cross-sectional area mm²	Order-No.	Conductor diameter guidance value mm	Diameter over shield guidance value mm	Overall diameter of cable Min. value mm	Overall diameter of cable Max. value mm	Minimum bending radii (fixed installation) mm	Minimum bending radii (free movement and entry) mm	Approx. net weight for 1000 m kg	Tension force Max. value N	Current-carrying capacity, touching surfaces, at 30°C, 3 cores loaded A	Short Circuit Current 1 s kA
TECWATER EMV-FC S1BC4N8-F											
3X1,5/1,5KON	5DH8 702	1,5	8,7	9,5	11,1	33	56	174	67	23	0,21
3X2,5/2,5KON	5DH8 703	2,0	9,7	10,5	12,1	48	73	230	112	30	0,36
3X4/4KON	5DH8 704	2,4	10,7	11,8	13,4	54	80	310	180	41	0,57
3X6/6KON	5DH8 705	2,9	12,2	13,6	15,2	61	91	389	270	53	0,86
3X10/10KON	5DH8 706	3,9	16,6	17,8	19,8	79	119	693	450	74	1,43
3X16/16KON	5DH8 707	5,0	19,4	20,9	22,9	92	137	1037	720	99	2,29
3X25+3G16/3	5DH8 708	6,3	24,5	25,3	28,3	113	170	1477	1125	131	3,58
3X35+3G16/3	5DH8 709	7,5	26,7	28,3	31,3	125	188	1883	1575	162	5,01
3X50+3G25/3	5DH8 710	8,9	31,0	33,2	36,2	145	217	2635	2250	202	7,15
3X70+3G35/3	5DH8 711	10,7	36,0	38,7	41,7	167	250	3633	3150	250	10,01
3X95+3G50/3	5DH8 712	12,3	41,5	43,7	47,7	191	286	4652	4275	301	13,59
3X120+3G70/3	5DH8 713	14,3	42,9	48,8	51,8	207	311	5933	5400	352	17,16